

**WHAT IS CLAIMED IS:**

1. A process for the mechanical transformation of a thread (F) of vegetable, animal or artificial or synthetic origin that includes abrading the thread (F)  
5 when the latter is supported in the air between two supports (55, 56).
2. The process of claim 1, wherein the thread (F) is continuously fed between the said supports (55, 56) while operating the said abrasion throughout its  
10 development.
3. The process of claim 1, wherein are used two cylinders (55, 56) for supporting the thread (F), at least one them being slotted.
4. The process of claim 1, wherein the thread (F) is  
15 unwound from a bobbin (2) through motor means (70) driving a pull unit (7), and the tension of the thread (F) as it unwinds is detected in order to drive said motor means (70) on the basis of the detected tension value.
- 20 5. The process of claim 4, wherein said bobbin (2) is supported on a shaft (20') driven by second motor means (200) and wherein said second motor means are driven on the basis of said detected value of the thread's tension.
- 25 6. The process of claim 1, wherein the abrasion is operated by moving abrasive means (6; 6') close to the thread (F), whose position relative to the same thread can be made to vary in relation to the orientation and/or distance values.
- 30 7. The process of claim 1, wherein the abrasion is operated by moving abrasive means (6; 6') close to the thread (F) which have different abrasive capacity.

8. The process of claim 1, wherein the abrasion is operated by moving abrasive means (6; 6') close to the thread (F) at times randomly differentiated.
9. The process of claim 2, wherein the abrasion is operated with means having a substantially cylindrical shape (6; 6') rotating about their own axes with a surface speed higher than that for the feeding of the thread (F).
10. An apparatus for the mechanical transformation of a thread (F) of vegetable, animal or artificial or synthetic origin, that comprises means (55, 56) able to sustain the thread (F) by defining a suspended length, and abrasive means (6; 6') disposed and acting in correspondence of said suspended length.
11. The apparatus of claim 10, wherein it comprises motor means (70) for unreeling the thread (F) from a bobbin (2) and sensor means (4) for detecting the tension of the thread (F) connected to said motor means (70).
12. The apparatus of claim 10, wherein said abrasive means consist of one or more brushes (6).
13. The apparatus of claim 10, wherein said abrasive means consist of one or more brushes (6) on which the bristles are disposed on more staves (16) spaced apart and parallel to the longitudinal axis of the brush (6).
14. The apparatus of claim 12, wherein the bristles of said brushes (6) are made from abrasive nylon.
15. The apparatus of claim 13, wherein the bristles of said brushes (6) are made from abrasive nylon.
16. The apparatus of claim 10, wherein said abrasive means consist of one or more cylinders (6') coated with diamond or emery paper.

17. The apparatus of claim 10, wherein said abrasive means are disposed on supports whose positions relative to the thread can be made to vary in relation to the orientation and/or distance values.

- 5 18. A yarn of vegetable, animal or artificial or synthetic origin, that has portions, along its longitudinal development, subjected to a mechanical abrasive action while the thread is suspended in the air between two supports.